

ARCS PROCEDURE:	DARWIN DAILY ROUNDS CHECKLIST	PRO(ARCS)-041.005
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SKYRAD

- Clean the WSI, PSP, PIR, NIP, UVB, and IRT every day. Note the time of cleaning on the fax sheet. (Item 4 on Fax Sheet)

SKYRAD – PSP (unshaded)

See Procedure PRO(PSP)-003

#	Question	Yes	No
1.	Was the dome clean of debris, water, or water spots prior to daily cleaning?		
2.	Is the dome free of internal condensation?		
3.	Is ventilator fan running?		
4.	Is the dome free of scratches or pits?		
5.	Is the dome free of cracks?		
6.	Are all cables and cable connectors securely attached and free of damage?		
7.	Is desiccant dry/blue? <i>If NO, see Procedure PRO(PSP)-002.</i>		

SKYRAD – UVB

See Procedure PRO(PSP)-003

#	Question	Yes	No
1.	Was the dome clean of debris, water, or water spots prior to daily cleaning?		
2.	Is the dome free of internal condensation?		
3.	Is the dome free of scratches or pits?		
4.	Is the dome free of cracks?		
5.	Are all cables and cable connectors securely attached and free of damage?		

SKYRAD – MFRSR

See Procedure PRO(RSR)-001

#	Question	Yes	No
1.	Are all cables and cable connectors securely attached and free of damage?		
2.	Is the sensor free of dirt and debris? <i>If NO, see Procedure PRO(RSR)-001.</i>		
3.	Is the MFRSR shadowband rotating 3 times per minute?		
4.	Did the band stop 3 times during rotation?		
5.	During the second stop, did band shade the detector?		

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SKYRAD – IRT (up-looking)

See Procedure PRO(IRT)-001

#	Question	Yes	No
1.	Was the gold mirror clean of debris, water, or water spots prior to daily cleaning?		
2.	Is the lens free of any internal condensation?		
3.	Are all cables and cable connectors securely attached and free of damage?		

SKYRAD – PIR (shaded #1)

See Procedure PRO(PIR)-003

#	Question	Yes	No
1.	Was the dome clean of debris, water, or water spots prior to daily cleaning?		
2.	Is ventilator fan running?		
3.	Is the dome free of scratches or pits?		
4.	Is the dome free of cracks?		
5.	Are all cables and cable connectors securely attached and free of damage?		
6.	Is desiccant dry/blue? <i>If NO, see Procedure PRO(PIR)-002.</i>		
7.	Is shading mechanism blocking dome from direct sunlight?		

SKYRAD – PIR (shaded #2)

See Procedure PRO(PIR)-003

#	Question	Yes	No
1.	Was the dome clean of debris, water, or water spots prior to daily cleaning?		
2.	Is ventilator fan running?		
3.	Is the dome free of scratches or pits?		
4.	Is the dome free of cracks?		
5.	Are all cables and cable connectors securely attached and free of damage?		
6.	Is desiccant dry/blue? <i>If NO, see Procedure PRO(PIR)-002.</i>		
7.	Is shading mechanism blocking dome from direct sunlight?		

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SKYRAD – PSP (B/W) (shaded)

See Procedure PRO(PSP)-003

#	Question	Yes	No
1.	Was the dome clean of debris, water, or water spots prior to daily cleaning?		
2.	Is the dome free of internal condensation?		
3.	Is ventilator fan running?		
4.	Is the dome free of scratches or pits?		
5.	Is the dome free of cracks?		
6.	Are all cables and cable connectors securely attached and free of damage?		
7.	Is desiccant dry/blue? <i>If NO, see Procedure PRO(PSP)-002.</i>		
8.	Is shading mechanism blocking dome from direct sunlight?		

SKYRAD – NIP (on tracker)

See Procedure PRO(NIP)-001

#	Question	Yes	No
1.	Was the window clean of debris, water or water spots prior to daily cleaning?		
2.	Is window free of scratches or pits?		
3.	Is the window free of cracks?		
4.	Is the inside of the window free of condensation?		
5.	Are all cables and cable connectors securely attached and free of damage?		
6.	Check the NIP alignment using the solar bull's eye. Is the sun dot at least halfway in the white ring?		

SOLAR TRACKER

#	Question	Yes	No
1.	Is the Tracker following the sun angle?		
2.	Are all cables and cable connectors securely attached and free of damage?		

DAQS – SKYRAD

#	Question	Yes	No
1.	Are all cables and cable connectors securely attached and free of damage?		

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DAQS – GNDRAD

#	Question	Yes	No
1.	Are all cables and cable connectors securely attached and free of damage?		

GNDRAD (on MET tower) – PSP (down-looking)

#	Question	Yes	No
1.	Looking up at the tower, make a visual inspection. Is the instrument free of obstruction?		

GNDRAD (on MET tower) – PIR (down-looking)

#	Question	Yes	No
1.	Looking up at the tower, make a visual inspection. Is the instrument free of obstruction?		

GNDRAD (on MET tower) – IRT (down-looking)

#	Question	Yes	No
1.	Looking up at the tower, make a visual inspection. Is the instrument free of obstruction?		

SMET INSTRUMENT ASSEMBLY – Optical Rain Gauge

See Procedure PRO(SMET)-001

#	Question	Yes	No
1.	Is lens clean? ** You should only clean surface monthly by using the optics brush/or as needed.		
2.	Is the sensor arm free of debris (nests, webs, etc.)?		

SMET INSTRUMENT ASSEMBLY – Wind Speed and Direction

See Procedure PRO(SMET)-001

#	Question	Yes	No
1.	Are both sensors pointing the same direction?		
2.	Are the propellers rotating when there is wind?		

SMET INSTRUMENT ASSEMBLY – T/RH Sensor

See Procedure PRO(SMET)-001

#	Question	Yes	No
1.	Is the aspirator operating?		
2.	Is the probe filter free of dirt? <i>If NO, see Procedure PRO(SMET)-001</i>		

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DAQS – SMET

#	Question	Yes	No
1.	Are all cables and cable connectors securely attached and free of damage?		
2.	Is desiccant dry/(blue)? <i>If tube contents are more than 75% pink, replace the desiccant, see PRO(SMET)-001.</i>		

STAND-ALONE INSTRUMENTS (outside) – CEILOMETER

#	Question	Yes	No
1.	Is window clean? <i>If NO, see Procedure PRO(CEI)-004</i>		

STAND-ALONE INSTRUMENTS (pitsided) – Microwave Water Radiometer (MWR)

See Procedure PRO(MWR)-001

#	Question	Yes	No
1.	Is the white teflon window undamaged?		
2.	Is the white teflon window clean? <i>If NO, see Procedure PRO(MWR)-001.</i>		
3.	Can you hear or feel the blower operating?		
4.	Wet finger and lightly touch the rain sensor on top of the microwave radiometer. Did the heater enable light turn red?		
5.	Is the rain sensor clean? Wipe clean with cloth and water (do this daily).		
6.	Placing your ear against the unit, did you hear six turns per minute when checking the functioning of the elevation mirror?		

STAND-ALONE INSTRUMENTS (outside) – Whole Sky Imager (WSI)

#	Question	Yes	No
1.	Is the dome clean (free of water spots, dust, or other debris)? <i>If dirty, clean with soft cloth and rainwater. See PRO(WSI)-001.</i>		
2.	Is the dome free of damage?		
3.	Is the occulter shading the entire camera lens under the dome?		

INSTRUMENT VAN (I-Van) – Environment

See Procedure PRO(ARCS)-007

#	Question	Yes	No
1.	Is van free of standing water inside?		
2.	Are air conditioners functioning?		
3.	Is van cool and dry?		
4.	Are lights functioning?		
5.	Are doors and latches sealed?		
6.	Are power boxes closed?		

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STAND-ALONE INSTRUMENTS (inside I-Van) – Micropulse Lidar (MPL)

See Procedure PRO(MPL)-002

#	Question	Yes	No
1.	Are all cables and cable connectors securely attached and free of damage?		
2.	Is the detector temperature between 10 and 40 degrees C?		
3.	Is the box temperature between 10 and 40 degrees C?		
4.	Is the laser temperature between 10 and 40 degrees C?		
5.	Are the DAY and TIME readings correct?		
6.	Check the remote handset. Is the display reading 1.0W, when the word STATUS (* key) is showing?		
7.	Is inside of view port window free of water, spider webs, and other debris? <i>If NO, see Procedure PRO(MPL)-002</i>		
8.	Is the inside of the Lidar tube free of condensation and debris?		
9.	Is the top of the transceiver free of debris or moisture? If NO, blow off debris with air or carefully dry it by dragging strips of tissue paper across the surface, without rubbing.		
10.	Hold a piece of paper over the transceiver. Does a uniform green circle display?		
11.	Press the test button on the front of the Shade Controller Chassis. Do the shutters drop down to cover the lens of the laser, return to open position 10-15 seconds later?		
12.	On the MPL-HR Computer, does the filename listed on the top agree with the current time display?		
13.	On the MPL-HR Computer, is the counter counting down?		
14.	On the MPL-HR Computer, is the backscatter plot displaying a jagged line graph?		
15.	On the MPL-HR Computer, does the cloud display agree with the actual conditions outside?		
16.	On the MPL-HR Computer, was recent data collection successful? (Refer to steps below)		
17.	Use ladder to look atop the I-Van. (Do not climb on top while MMCR is on), Is the window clean? If NO, see Procedure PRO(MPL)-002		

Additional Check Items:

Inside:

- To check on MPL-HR data collection go to the MPL-HR computer:
 1. Press Ctrl – Escape to hide running MPL software
 2. Right-click green “U” at bottom right
 3. Select “Show window” by left-click
 4. Verify successful file transfer of recent data
 5. Click on “x” close box

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(MPL “Additional Check Items” continued)

Outside:

- Clean and dry the MPL-HR view port and sunshade window atop I-Van per question 17.

STAND-ALONE INSTRUMENTS (inside I-Van) – CEILOMETER Computer

See Procedure PRO(CEI)-004

#	Question	Yes	No
1.	Is the window screen free of warnings or alarms, and is the clock updating? If NO, press the “RESET” button?		

STAND-ALONE INSTRUMENTS (inside I-Van) – MWR

#	Question	Yes	No
1.	Is the data scrolling up the screen?		

STAND-ALONE INSTRUMENTS (inside I-Van) – Whole Sky Imager (WSI)

See Procedure PRO(WSI)-001

The WSI equipment in the Blue Box is as follows, from top to bottom: Monitor, Computer, Occultor ACP, Sensor ACP, MO Driver. The GPS is a small box located outside the blue box. Every 10 minutes the WSI is supposed to grab an image, changes happen, data is archived and the Occultor moves. Open the front door of the WSI blue box and wait for the next scheduled grab (as indicated on the monitor) and watch for the following in this sequence:

#	Question	Yes	No
1.	Does the monitor display the correct date and time?		
2.	Is the monitor display free of flags?		
3.	Does the monitor display an image of the sky?		
4.	<i>Does the monitor display show the sun within the occultor boundary?</i>		
5.	Does the image on the monitor change? (May take several minutes)		
6.	Does the monitor display an “FTP IN PROGRESS” message in the status column? (This happens only when the WSI is transferring data to the SDS and may take several minutes)		
7.	On the Sensor ACP; do the “spectral” lights change? (May take several minutes)		
8.	On the Occultor ACP; did the “ARC POSITION (DEG)” change? (May take several minutes)		

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STAND-ALONE INSTRUMENTS (inside I-Van) – Millimeter Cloud Radar (MMCR)

The MMCR equipment on the hanging rack is as follows, from top to bottom: TWT Amp, Pulse Controller, Coherent Up & Down Converter, Oscilloscope, ADC, MUX, Receiver/Modulator, Interface, Radar Computer, DMS Computer. The MMCR monitor is off to one side.

Outside:

#	Question	Yes	No
1.	On the top of the I-Van (view from ground), is the Radome Cover undamaged (look for rips and tears)?		

Inside:

2.	Examine the ceiling penetration from inside the van. Is the penetration free of leakage?		
3.	On the TWT Amplifier is the "Power On" LED lit?		
4.	On the TWT Amplifier is the "Remote" LED lit?		
5.	On the TWT Amplifier is the "Operate" LED lit?		
6.	On the TWT Amplifier is the "Fault" light off?		
7.	On the ADC, is the "Power" LED lit?		
8.	On the ADC, is the "Talk" LED and the "Listen" LED flashing?		
9.	On the MUX, is the "Power" LED lit?		
10.	On the MUX, is the "Active" LED lit?		
11.	On the MUX, is the "Talk" LED and the "Listen" LED flashing?		
12.	Is the Receiver Modulator display cycling between 50 and 90 meters? (Observe for at least 30 seconds).		
13.	On the upper rack mount Radar Computer, is the PWR light lit, and is the HD light blinking?		
14.	On the lower rack mount DMS Computer, is the PWR light lit, and is the HD light blinking?		
15.	On the MMCR monitor, click on "POP4_CR.BAT" window to highlight it; then press F8 on the keyboard. Is there data on the screen?		
16.	If there is data on the screen, is it believable (look at clouds outdoors to compare)?		
17.	On the TWT Amplifier, open the small access door at the top left. Are all error lights off?		
18.	On the coherent Up and Down Converter, are the "alarm" (200Ghz. And 16.40 Ghz.) lights off?		

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DATA VAN (D-Van) – Environment

See Procedure PRO(ARCS)-007

#	Question	Yes	No
1.	Is van free of standing water inside?		
2.	Are air conditioners functioning?		
3.	Is van cool and dry?		
4.	Are lights functioning?		
5.	Are doors and latches sealed?		
6.	Are power boxes closed?		

DATA VAN – SDS

On the work surface closest to the Van entrance and to the left of the SDS rack you will find:

- R1 Monitor
- The “Media to be **MAILED**”, “Media to be **ARCHIVED**”, and “**BLANK** media” containers are all located on the upper shelf.

On the work surface at the rear of the Van and to the right of the SDS rack you will find the **SAM Laptop**.

#	Question	Yes	No
1.	Did you login to R1 successfully? Go to the R1 Monitor, at the HandS page login as (oper) and enter the password (ru4reel), and press the Enter key.		
2.	Under the Data Processing heading are all collections active? If not view details page and list instruments that are not collecting and notify on call SSU Tech at 8947-3815.		
3.	Under the Data Processing heading are all ingests active? If not view details page and list instruments that are not ingesting and notify on call SSU Tech at 8947-3815.		
4.	Under the Disk heading are all disks under limit? If not notify on call SSU Tech at 8947-3815.		
5.	Under the Daemon heading are all active? If not notify on call SSU Tech at 8947-3815.		
6.	Under the Network heading are all active? If not notify on call SSU Tech at 8947-3815.		
7.	Go to the rear of the SDS rack and make a visual check. Are all fans operating correctly?		

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DATA VAN (D-Van) – SAM

#	Question	Yes	No
1.	Are all the dots GREEN or YELLOW? (If red, notify on-call SSU Tech at 8947-3815 or call TWPO at 1-505-667-1186.)		

EXPANSION VAN (E-Van) – Environment

See Procedure PRO(ARCS)-007

#	Question	Yes	No
1.	Is van free of standing water inside?		
2.	Are air conditioners functioning?		
3.	Is van cool and dry?		
4.	Are lights functioning?		
5.	Are doors and latches sealed?		
6.	Are power boxes closed?		

UTILITY VAN (U-Van) – Environment

See Procedure PRO(ARCS)-007

#	Question	Yes	No
1.	Is van floor free of standing water, diesel, oil, or fluids inside?		
2.	Are air conditioners functioning?		
3.	Is van cool and dry?		
4.	Are lights functioning?		
5.	Are doors and latches sealed?		
6.	Are power boxes closed?		

RECORD GENSET RUNTIME HOURS: _____ (will be entered on electronic SDL.)

RAD DOMES CLEANED AT _____ GMT. (will be entered on electronic SDL.)

SDL COMMENTS SECTION NOTES: These should be very brief, as in the following examples:

For SMET INSTRUMENT ASSEMBLY – WIND SPEED AND DIRECTION

Question #1: “Lower wind sensor broken; propeller not turning; points N constantly.”